USGS science for a changing world

Earthquake Shaking **Green Alert**

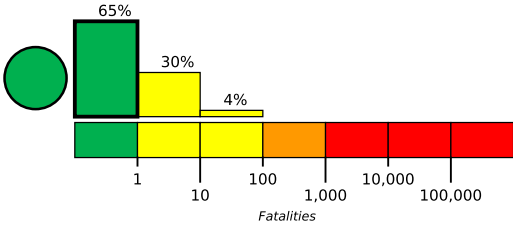
GSN USAID FROM THE AMERICAN PEOPLE ANSS

M 7.1, 138km E of Bitung, Indonesia

Origin Time: 2019-11-14 16:17:40 UTC (Fri 01:17:40 local)
Location: 1.6002° N 126.4157° E Depth: 33.0 km
FOR TSUNAMI INFORMATION, SEE: tsunami.gov

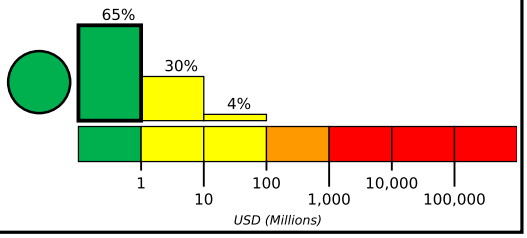
PAGER Version 3
Created: 6 hours, 25 minutes after earthquake

Estimated Fatalities



Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.

Estimated Economic Losses

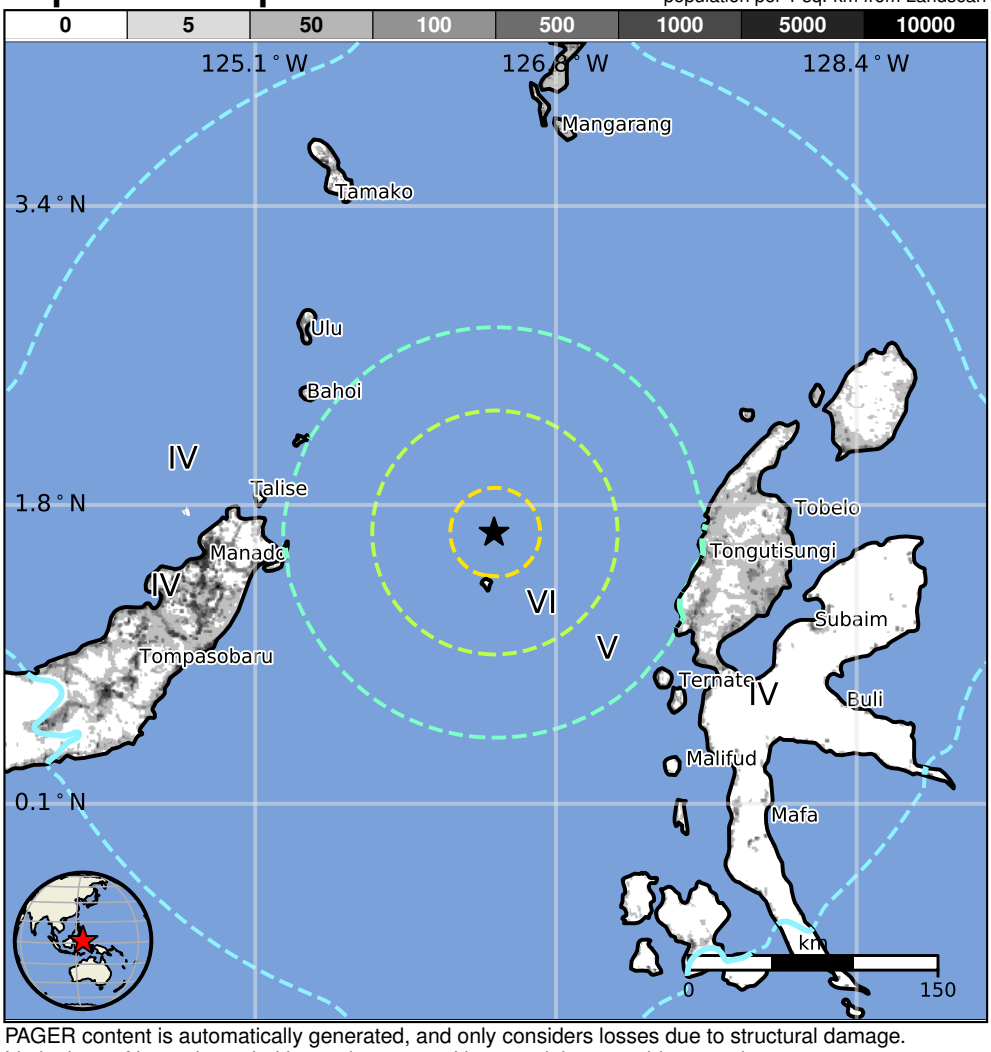


Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	21k*	3,043k	391k	0	0	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure



Structures

Overall, the population in this region resides in structures that are vulnerable to earthquake shaking, though resistant structures exist. The predominant vulnerable building types are unreinforced brick with concrete floor and precast concrete frame with wall construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
2007-01-21	54	7.5	VI(283k)	3
1994-10-08	357	6.8	VII(5k)	1
1994-01-21	163	6.9	IX(28k)	7

Recent earthquakes in this area have caused secondary hazards such as tsunamis that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
V	**Tongutisungi**	**<1k**
V	**Manado**	**452k**
V	Susupu	<1k
IV	Jailolo	<1k
IV	Tatelu	<1k
IV	Pineleng	<1k
IV	Bitung	137k
IV	Tondano	33k
IV	**Ternate**	**102k**
IV	Sofifi	36k
IV	Tomohon	28k

bold cities appear on map. (k=x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.
https://earthquake.usgs.gov/earthquakes/eventpage/us60006bjl#pager

Event ID: us60006bjl